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FRACTURES OF THE HEAD OF THE RADIUS.

BY R. M. HODGES, M. D.

In October, 1866, I reported the following case to the Boston Society for Medical Improvement.

September 19, 1866, a man, aged thirty-two, fell from a mast-head, injuring himself fatally, and died in my wards at the Massachusetts General Hospital,[1] six hours after the accident. Among his injuries were dislocation and fracture of the elbow, not compound or accompanied by much swelling. He was examined with great care by the visiting surgeons, and the essential features of the fracture were correctly diagnosticated, but the post-mortem dissection disclosed a longitudinal fracture, without displacement, through the head of the radius (Figure 1), which was not detected during life. The specimen [2] exhibits a clear and regular split, involving nearly one half the head of the radius, and extending no further than the neck of the bone. It is accompanied by an oblique fracture of the shaft of the ulna, commencing at the depression of the articular surface (Figure 2, *a*), between the coronoid process and the olecranon, extending almost longitudinally three and a quarter inches, and detaching a portion of the shaft with the olecranon. The tip of the external condyle of the humerus is slightly broken.

In the remarks made I said "there were but few instances of longitudinal fracture of the head of the radius recorded in the books," and that in these it was "associated with the rare accident of a fracture of the coronoid process. An inspection of this specimen would show that it might have added another to this list had the fracture of the ulna terminated anteriorly (towards which aspect it inclined and came nearest, Figure 2, *b*), instead of posteriorly." [3]

The cases which I had found were the following: —

That of A. Bérard, who, in 1834, observed the first recorded instance of this fracture, in an individual who committed suicide by throwing himself from a second story window. The elbow presented all the signs of a dislocation backwards. The reduction was accomplished without much difficulty, in spite of the cadaveric rigidity. A little pressure on the arm and fore-arm in opposite directions sufficed to reproduce the displacement, and was attended by a slight crepitation. The dissection showed a fracture of the coronoid process, and also another, which, splitting the head of the radius, extended obliquely downwards half an inch upon the anterior face of the bone, severing about one third of its articular surface.[1]

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[1] Records, cxxvi. 148.

[2] Warren Museum, 1031.

[3] Boston Medical and Surgical Journal, December 6, 1866, page 383.

That of Velpeau, occurring in 1840. A man, fifty years old, dislocated his elbow in a violent fall. This was at first taken for a contusion. At the end of six weeks, not recovering the use of his limb, he consulted M. Velpeau, who recognized the dislocation. Ineffectual attempts were made to reduce it. A fatal attack of erysipelas ensuing, an autopsy revealed the fact that the dislocation was accompanied by a fracture of the coronoid process, and by a transverse fracture of the anterior third of the head of the radius.[2]

In Mr. Flower's article on Fractures of the Upper Extremity,[3] the following statement is made: "In the two specimens of fracture of the coronoid process in the museum of St. George's Hospital, the head of the radius was also split longitudinally." These specimens are from "a man killed by a fall from the roof of St. George's Hospital, in whom the coronoid processes were found to be fractured and the two bones of the fore-arm dislocated backwards on both sides. The specimens are now preserved in the museum of the hospital."

Besides these four cases there may be seen in Bryant's Practice of Surgery[4] the drawing of a longitudinal fracture of the head of the radius, also accompanied by one of the coronoid process, from a woman aged seventy, whose arm was amputated for compound fracture of the elbow caused by a fall.

The comparative rarity of this fracture leads me to give, in addition to the single case reported in 1866, and those already instanced, several others which have come under my personal observation.

On the 30th of April, 1868, a man, aged forty, fell forty feet to a brick pavement, sustaining a compound fracture of the elbow-joint, for which I performed excision one hour afterwards, at the Massachusetts General Hospital. During the following night he complained of great distress in the abdomen, gradually sank, and died towards morning. No autopsy was allowed.[5]

The specimen in the Warren Museum[6] shows the head of the radius split into two unequal parts (Figure 3), neither of which is detached, nor does the fracture extend into the shaft of the bone. The olecranon and coronoid processes of the ulna are broken from the shaft by a somewhat comminuted fracture, and the last-named process into two portions longitudinally. The humerus is uninjured.

On the 12th of July, 1866, a man, aged twenty-four, at work in a machine-shop, was thrown against the machinery by the breaking of a tool he was using, fracturing his right elbow and opening the joint. He entered the Massachusetts General Hospital one hour afterwards. The external condyle was broken off, and with it a segment of the head of the radius, equivalent to one third of its surface. I excised the joint, and the patient was discharged, well, September 3d.[7]

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[1] Traité des Fractures et des Luxations. Par J. F. Malgaigne, tome ii., page 636.

[2] Malgaigne, loc. cit.

[3] First edition of Holmes's Surgery, reëdited by Mr. Hulke in the second edition.

[4] American edition, page 854.

[5] Records, cxxxviii. 4.

[6] No. 1026.

[7] Records, cxxvi. 146.

The specimen in the Warren Museum[1] exhibits the bones as described. There is no comminution of either of them, the fractures being confined to the head of the radius and the external condyle. The ulna is uninjured.

The thin section (Figure 4) removed by the saw at the time of operation, being hardly more than the articulating surface, is scarcely recognizable as a head of the radius in the fac-simile drawing which is given of the specimen. This, as well as the others of the series, have been carefully made by Dr. H. P. Quincy.

Specimen 1023, Warren Museum, is from the dissecting room, and without history. It was obtained by me in 1856, and exhibits an oblique fracture of the shaft of the radius at the juncture of its middle and upper third, very firmly united. Upon the head of the bone is a small fracture, three eighths of an inch in diameter, chipped, as it were, from the articulating surface (Figure 5). The fragment has a well-defined outline, and is united in place without any signs of new growth of bone around it.

The muscles of the arm were atrophied, and rotation of the fore-arm impaired, but this was due to the fact that the upper fragment of the broken shaft of the radius was twisted upon the lower fragment, the bicipital tuberosity looking outwards instead of inwards.

On the 27th of March, 1874, a man, aged fifty-five, engaged in loading stone, had a heavy mass fall on his right arm, producing a compound, comminuted fracture of the elbow-joint. Admitted to the Massachusetts General Hospital, I performed excision twenty-four hours after the accident, and he was discharged, well, June 18th.[2]

The specimen in the Warren Museum[3] shows the head of the radius divided into three nearly equal portions (Figure 6) by a fracture whose lines radiate from the centre of the articular surface, and which, passing downwards, have split and comminuted the neck and shaft of the bone for an inch and a half in extent. One of the three divisions of the head has been lost. The external condyle of the humerus is broken off. The ulna is uninjured.

On the 2d of September, 1863, a man, aged twenty-one, received a charge of small shot in the left arm. The integuments and muscles near the elbow-joint were torn for a space of six by four inches, and the bones of the elbow broken, although not by the shot, few of these having penetrated deeper than the soft parts. I amputated the arm at the Massachusetts General Hospital, seven hours after the accident, and the patient was discharged October 3d.[4]

The specimen in the Warren Museum[5] shows the head of the radius

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[1] No. 1024.

[2] Records, clxi. 175.

[3] No. 4030.

[4] Records, cvi. 200.

[5] No. 1017.

split into three nearly equal segments (Figure 7), one of which is detached and lost. A multiple longitudinal fracture, continuous with the line of one of the divisions of the head, extends downward for an inch on the side of the neck and shaft of the bone. The tip of the external condyle is broken off. The ulna is uninjured.

Some of the above cases are open to the criticism of being mere comminuted fractures. But still it is difficult to believe, when so peculiar a line of separation repeats itself, that it is not in obedience to a law which marks this point as a weak one in the elbow-joint, and predisposed to break under certain directions of applied force. It will be noticed that in two cases, not compound (Velpeau's and that of Figure 1), the fracture was not detected by experienced surgeons. Indeed, it was not discovered before dissection or excision in any of the cases reported except that shown in Figure 4. In four instances it occurred without any accompanying injury of the ulna (Figures 4, 5, 6, and 7), and in eight (Figures 1, 3, and 5, and the cases of Bérard, Velpeau, Holmes (two), and Bryant) without any injury of the humerus, but in no instance without the co-existence of some fracture. Of the cases surviving the general injury of which this fracture was a part, all but two (Velpeau's and that represented in Figure 5) required amputation or excision.

This individual experience (six cases out of eleven reported) leads me to believe that this injury may exist in cases of simple fracture terminating less disastrously, and that from its difficult diagnosis, the non-displacement of the fragments, and the comparative rarity of fatal elbow accidents, it happens more often than has been supposed. Fracture of the coronoid process, asserted to occur, equally with the one under consideration, in connection with backward dislocations of the elbow-joint, is undoubtedly rare. Professor Hamilton states "that there is no evidence that the coronoid process was ever broken by the action of a muscle," and "only one example in which it is probable that a fracture occurred as a consequence of a dislocation of the radius and ulna backwards." I have, however, cited the cases reported by Bérard, Velpeau, and Holmes, in which this fracture existed, and was verified by dissection. It accompanied none of the fractures of the head of the radius which I have myself observed.

PHYMOSIS; INCOÖRDINATION OF MOVEMENTS, WITH LOSS OF EQUILIBRATING POWER; CIRCUMCISION; RECOVERY.

BY E. P. HURD, M. D., NEWBURYPORT.

In the Philadelphia *Medical and Surgical Reporter* for October 14th appeared an article by Dr. Sayre, of New York, on the causal relation between phymosis and certain paralyses in children. Several illustrative cases were reported, in which recovery from the paralysis followed circumcision. In the *Reporter* for November 11th, 1876, appears a report of a case of my own in which severe nervous irritation, lithuria, etc., was proved due to a similar cause, recovery ensuing after circumcision. In the following case, also in my own practice, the symptoms were those of ataxia and loss of equilibration, muscular spasms and general epileptiform convulsions being also features of the case.

The maintenance of equilibrium as well as muscular coördination "involves the conjoint operation of three separate factors: (1.) A system of efferent nerves. (2.) A coördinating centre. (3.) Efferent tracts in connection with the muscular apparatus concerned in the action. The faculty of coördination is overthrown by lesions of the afferent apparatus alone, or by lesions of the encephalic centre alone, or by lesions of the efferent tracts alone, or by conjoint lesion of all."[1]

That a severe and persistent irritation from any part of the genital apparatus may cause morbid excitation, nutritive disturbances, atrophic degenerations of those spinal centres primarily implicated, a perturbation which eventually becomes widely diffused, rendering considerable portions of the spinal medulla unfit for their proper functions, — that thus an irritating lesion may become an *inhibiting* lesion is quite in accordance with physiological and pathological facts.

History. — Was called, November 1, 1876, to see W. B., a bright lad of seven years. The parents are healthy, and of good habits. He had been in poor health for several months, losing strength, appetite, flesh, etc. Had been restless and "nervous." He looked thin and pale, was dull, taking but little notice of anything, and saying but little. *Ataxie locomotrice* is a marked symptom. Could not walk across the room without staggering and pitching headlong. The same want of coördination was manifested when he attempted to feed himself; he made bad work of it, and was soon forced to give it up. It seemed impossible for the will to guide the hand to the mouth. Intellect not disturbed, only the hebetude before mentioned was marked. Responded to questions in monosyllables, and speech was not very distinct. Pupils widely dilated; at times an outward and slightly upward squint of both eyeballs, from paresis,[2] as was supposed, of the third pair of nerves. Marked dullness of hearing. No febrile heat; pulse normal. No pains complained of. Could not elicit from him whether he experienced any abnormal sensations on attempting to put his feet on the floor, or whether the tactile or muscular sense was perverted. Hyperæsthesia of general surface.

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[1] Vide page 47 of Functions of the Brain, by David Ferrier. New York: G. P. Putnam's Sons. 1876.

[2] The *oculo-papillary* phenomena observed in the case of this patient are common to chronic myelitis, being especially remarked in posterior spinal sclerosis. See Jaccoud, Pathologie interne, vol. i. page 363, Paris, 1875. Jaccoud refers this singular behavior of the eye and pupil to irritation of the cilio-spinal centre. "Ces phénomènes oculo-papillaires sont produits par l'excitation directe ou réflexe de cette région de la moelle qui donne naissance aux filets sympathiques du muscle radié de l'iris, et à ceux qui animent le muscle orbitaire inférieur de H. Muller."

November 2d. Symptoms have remained the same as yesterday. He either lies on the lounge, or sits in his mother's lap. He cannot support himself in a sitting posture. Kicks the legs, tosses the arms, etc., but cannot coördinate his members in any act. Had a restless night, frequently screaming out; repeatedly had partial spasms.

November 6th. W. had a severe fit of epileptiform type last night, and he seems to-day more listless and powerless.

There has been no constipation or difficulty of micturition. The treatment has been thus far the administration of nervous sedatives.

November 7th. Dr. Tilton saw the case in consultation with me. Dr. Tilton held the theory of scrofulous disease of the cerebellum, the precise lesion not determinable. The theory of scrofula was favored by the fact that certain glandular swellings in the neck (submaxillary and thyroid) which the child had once had (following, however, a simple eruptive fever) had disappeared. Dr. Tilton gave an unfavorable prognosis, and regarded all medication as useless.

November 8th. I have been obliged to give my little patient chloral (both the hydrate and the croton chloral) to quiet the excessive nervous irritability manifested during nights, but all has been of little use. He is evidently rapidly failing, gets very little sleep, and his parents are worn out with the care of him. On this occasion I made the following prescription: —

℞ Pulv. opii	gr. ⅛.
Camphor	
Ext. hyoscyami	āā gr. i. M.
Ft. pil. una.	

Give *pro re natâ*. Paint along spine with tincture of iodine.

November 10th. The pill of camphorated hyoscyamus and opium has had a beneficial effect on the patient, who slept a good part of the night. His general condition is not at all improved.

November 13th. My visit was made at nine o'clock P. M. Little W. lay naked in his mother's arms. A glance revealed phymosis. The prepuce was greatly elongated, strangulating the glans, and the urinary *punctum* was minute.

November 15th. Ether was administered, and circumcision was performed in the usual way. An oval portion of mucous membrane was clipped off to correspond with the part removed by the bistoury (the product of the first excision being mostly integument); the prepuce could then be reflected over the glans. Four stitches united the cut edges of the skin and mucous membrane. Carbolized dressings were then applied. Dr. J. A. Tilton assisted.

There was considerable œdema the next day, accompanied with pain.

November 17th. The swelling and pain continued. The stitches were removed under ether. Several incisions were made into the swollen prepuce to let out blood and serum, and the urine was drawn off by a catheter, none having been voided for twenty-four hours.

November 18th. Swelling and pain diminishing, but considerable sloughing of the tumefied foreskin is going on. The restlessness has abated, and there have been no more spasms.

November 27th. The foreskin has sloughed away up to the corona glandis, and the parts beneath look healthy.

December 7th. The patient has nearly recovered. There has been a rapid gain in the power of coördination. Equilibration is now restored; he walks slowly and feebly, but with perfect steadiness. He can feed and otherwise help himself with his hands. Pupils of eyes are natural, and there is harmony of the ocular muscles. There has been no return of spasms or convulsions, and his sleep is now good. He amuses himself all day long with his playthings, is lively and chatty, and the change in his condition is as gratifying as it is striking.

January 9, 1877. Since the above was written the case has progressed favorably. The lad now plays with his hand-sled out-of-doors, and is able to govern his movements very well. There is at times a little stiffness and awkwardness about his gait, especially perceptible when he attempts to run. He sleeps well; no nervous irritability and no spasms.

Remarks. — Cases of paraplegia and ataxia of movement from peripheral irritation are sufficiently common, as is shown by Brown-Séquard in his lectures, by Weir Mitchell in a paper published in the *New York Medical Journal* in 1866, by Jaccoud in a treatise published in 1864,[1] and by others. Vulpian,[2] however, denies that there is any such thing as reflex functional paralysis, but for reasons that to me are not satisfactory.

I think that the case above reported must be considered a case in point, where the ataxia was purely functional, owing to irritation of the glandular branches of the dorsalis penis nerve, the speedy relief following circumcision demonstrating this. Any concomitant spinal lesion, which on Vulpian's theory is to be assumed, must have been trifling.

Had the phymosis not been discovered, it is natural to suppose that general paralysis with dementia would have been the ultimate result.

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[1] Les Paraplégies et l'Ataxie du Mouvement. Paris. 1864.

[2] Leçons sur l'Appareil Vaso-Moteur. Leçon Dix-Septième. Paris. 1875.

RECENT PROGRESS IN PHYSIOLOGY.

BY HENRY P. BOWDITCH, M. D.

RECENT THEORIES ON THE INNERVATION OF THE HEART.

Ganglionic Apparatus. — Rosenthal[1] rejects the commonly received theory that the heart contains both motor and inhibitory ganglia, and recognizes in the frog's heart two groups of ganglion cells having similar functions, namely, "Remak's ganglia" in the venous sinus and "Bidder's ganglia" in the auricular septum and the base of the ventricle. Both these groups have, according to Rosenthal, motor functions, but the former is the proper automatic centre of the heart's movements, while the latter is an accessory centre which is brought into activity only by an increased stimulus, and then causes the heart to perform a greater amount of work, in the same way that the respiratory apparatus works with increased energy in dyspnœa. The various experiments which have been supposed to prove the existence of inhibitory ganglia are interpreted by Rosenthal in accordance with this theory. Thus, a ligature round or a section through the sinus (first experiment of Stannius) stops the action of the heart, not by irritation of an inhibitory organ, as supposed by Heidenhain,[2] but by an interruption of the nervous connection between Remak's ganglia and the muscular substance of the heart. A second ligature or section near the boundary between the auricles and ventricle (second experiment of Stannius) brings the ventricle again into activity, not by removing it from the influence of the irritated inhibitory organ, but by stimulating Bidder's ganglia, which are not ordinarily in an active condition.

An ingenious experiment by Goltz is considered by Rosenthal to lend force to this theory. The experiment consists in placing a ligature tightly around the lower part of the auricles of the frog's heart and removing it again. It is then found that the ventricle no longer pulsates, but that the auricles, continuing their movements, fill the ventricle with blood, dilating it more and more with every pulsation. When the distention becomes excessive, the ventricle makes a single contraction, driving out the blood which has accumulated in it; and the same process is then repeated again and again. The inactivity of the ventricle in this experiment is, according to Rosenthal, due to the destruction by the ligature of its nervous connections with Remak's ganglia, and its occasional contraction is dependent upon an irritation of Bidder's ganglia by the forcible distention of its muscular substance. The stoppage of the ventricular contractions cannot be due to an irritation of an inhibitory organ, because, as Rosenthal points out, it occurs only after the removal of the ligature. As long as the thread remains in place it seems to cause by the irritation of its presence a series of rhythmical contractions of the ventricle, which, however, are not accompanied by any great changes of volume, since no blood can enter or leave that portion of the heart.

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[1] Bemerkungen über die Thätigkeit der automatischen Nervencentra. Erlangen, 1875.

[2] Studien, i. page 110.

An experiment reported by Munk at the meeting of German naturalists at Speyer can also be readily explained in accordance with this theory. Munk found that irritation by gentle pressure on any point of a heart rendered inactive by removal of the venous sinus causes a single contraction. Pressure applied to any part of the auricles causes a contraction of these cavities, followed immediately by a contraction of the ventricle. Pressure on the ventricle causes contractions, first of the ventricle, then of the auricles, and then of the ventricle again. But pressure with the end of a probe exactly on the spot where Bidder's ganglia are situated causes a series of regular contractions which gradually become slower and finally cease. It seems evident, therefore, that Bidder's ganglia are capable of producing a regular series of pulsations, but this occurs only when they are subjected to some abnormal sort of stimulation. Rosenthal does not state how the action of various drugs (for example, atropine, muscarine, nicotine, etc.) upon the heart is to be explained in accordance with this theory, and, as the peculiar effects of these substances have furnished the strongest reasons for assuming the existence of inhibitory ganglia in the heart, a theory which dispenses with this assumption can scarcely, in the absence of any such explanation, be regarded as well established.

Motor Ganglia in Apex. — From the fact that the lower portion of the ventricle of the frog's heart remains inactive when separated from the rest of the organ, it has been almost universally believed that no automatic motor ganglia exist in this part of the heart. It was shown, however, in some experiments made by the reporter [1] in 1870, that the apex of the heart may under the influence of certain drugs execute independently a series of movements more or less rhythmical in their nature. The subject was further investigated by Merunowicz,[2] who found that the apex of the heart (that is, the lower half or two thirds of the ventricle), when separated from the rest of the organ and kept supplied with a mixture of defibrinated rabbit-blood and 0.6 per cent. solution of common salt, continues to contract with a regular rhythm for a very long time. The reason why these pulsations have not been noticed by other observers seems to be that considerable time, from ten minutes to an hour, usually elapses after the commencement of the experiment before the pulsations begin. This observation led the writer to the conclusion that "automatic organs producing the heart-beat are contained in the apex of the heart as well as in the auricles, and in the adjacent portion of the ventricle."

[1] Ludwig's Arbeiten, vi. 139.

[2] Ludwig's Arbeiten, x. 132.

Bernstein[1] has, however, recently given strong reasons for rejecting this theory. He finds that if the ventricle is compressed transversely in the middle with a pair of narrow-bladed forceps, the part beyond the line of compression remains absolutely inactive, though it contracts on stimulation. The rest of the heart continuing its normal movements keeps up the circulation through the body and through the inactive portion of the ventricle. The nutrition of this part of the heart must therefore be well maintained. Yet even after the lapse of one or two days it shows no sign of spontaneous activity. Bernstein concludes, therefore, that "under normal physiological conditions no automatic stimulation occurs in the ventricle of the frog's heart." The contractions observed by Merunowicz are regarded by Bernstein as due to an irritation of the substance of the heart by the defibrinated rabbit-blood, and are analogous to the rhythmical movements produced in the ventricle by the passage of a constant electrical current as observed by Eckhard[2] in 1835. If rhythmical movements can thus be produced in a muscular organ commonly regarded as destitute of nerve centres, it seems to show that the cardiac movements may be explained without the assumption of a complicated mechanism of motor and inhibitory ganglia.

In this connection it is interesting to notice the conclusions reached by Foster and Dew-Smith[3] as the result of their experiments on the heart of mollusks. In these animals the heart seems to be absolutely destitute of nerve tissue, yet the excised organ will continue to pulsate for a great length of time, and the application of a weak constant electrical current will inhibit the movements. The same observers[4] found that a weak constant current applied to the lower part of the frog's ventricle, *in situ*, often causes a cessation of all movement during its continuance, while a stronger current produces rhythmical contractions the rate of which increases with the strength of the current. From these and other experiments the authors conclude that the rhythmical pulsations of the heart are *protoplasmic* in their character and depend entirely upon the muscular tissue for their performance, while the nerve plexus has only a regulating or coördinating function which enables the various parts of the heart to work together harmoniously.

Cardiac Branches of the Vagus.—The theory so long maintained by Schiff, that the inhibition of the heart's action by the vagus nerve depends upon the rapid exhaustion of motor or accelerator fibres, has been abandoned by him[5] in consequence of the observation that irritation of the vagus in a cat poisoned by atropia often causes a decided and prolonged acceleration of the heart-beats quite inconsistent with the "exhaustion theory." Similar observations had been made by Schmiedeberg[1] on the frog. Schiff therefore admits the existence of cardiac inhibitory fibres in the vagus, but regards them as less irritable than their antagonists, for he still maintains that a feeble irritation of the vagus always produces acceleration of the heart-beats. The observations of Boehm,[2] that in a certain stage of curare poisoning irritation of the vagus accelerates instead of retarding the heart-beats, can also be explained on the supposition that the vagus contains cardiac nerve fibres of two sorts, namely, inhibitory fibres which can be paralyzed by curare, and accelerating fibres which cannot be so affected.

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[1] Centralblatt für die medicinischen Wissenschaften, 1876, page 385.

[2] Beiträge zur Anatomie und Physiologie, i. 147.

[3] Pflüger's Archiv, v. 191, and Proceedings of the Royal Society, No. 160, 1875.

[4] Journal of Anatomy and Physiology, x., part 4, and London Medical Record, iv. 446.

[5] Moleschott's Untersuchungen, xi. 188.

Foster[3] observed similar phenomena in frogs poisoned by antiar, but gives various reasons for rejecting the assumption that there are accelerating fibres in the vagus nerve. Regarding antiar as essentially a muscular poison, he is inclined to explain the phenomena in question by changes produced in the muscular substance.

The rise of blood tension which is commonly noticed after an irritation of the vagus has been studied by Rossbach and Quellhorst,[4] and found to depend not upon a reaction after the previous inhibition of the heart-beats, but upon the irritation of vaso-motor fibres of the abdominal viscera. This is shown by the fact that if the cardiac inhibitory fibres are poisoned with atropine, irritation of the vagus still causes rise of blood tension; and that if the vagus is divided where it lies on the œsophagus below the heart, irritation of the cervical portion of the nerve inhibits the heart's action, but after the irritation the blood tension does not rise above the normal level.

Accelerator Nerves of the Heart. — These nerve fibres, of which the course in the dog from the cervical cord through the ganglion stellatum and cardiac plexus was very accurately described by Schmiedeberg,[5] have been studied and figured in the cat with equal minuteness by Boehm.[6] This observer found that the acceleration produced by irritation of these fibres amounted usually to twenty or thirty per cent., and was seldom less than ten or more than forty per cent., the heart-beats becoming weaker at the same time that they became more rapid. The effect of irritation of these nerves is apparent only after a latent period of five or ten seconds, and is persistent for a long time after the irritation has ceased. Prolonged irritation does not readily produce exhaustion. The relation of these nerves to the vagus has been carefully studied by Baxt,[7] who finds that the two sorts of nerve fibres are not to be regarded, strictly speaking, as antagonistic to each other, for the effect of irritation of the vagus cannot be prevented by a simultaneous irritation of the accelerating nerves. Moreover, a very brief irritation of the accelerating nerves will produce upon the movements of the heart a very prolonged effect, which an irritation of the vagus can interrupt only during the actual continuance of the stimulation.

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[1] Ludwig's Arbeiten, v. 41.

[2] Archiv für experimentelle Pathologie und Pharmakologie, iv. 351.

[3] Journal of Anatomy and Physiology, x. 586.

[4] Pflüger's Archiv, x. 439, und Würzburger phys.-med. Verhandlungen, ix. 13.

[5] Ludwig's Arbeiten, vi. 34.

[6] Archiv für experimentelle Pathologie, iv. 255.

[7] Ludwig's Arbeiten, x. 179.

(*To be concluded.*)

PROCEEDINGS OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

A. L. MASON, M. D., SECRETARY.

NOVEMBER 25, 1876. Fifty-nine members were present. DR. WILLIAMS, the president, in the chair.

Intussusception; Sloughing; Discharge of Intestine. — DR. GERRY, at the request of members of the society, reported a case of intussusception in which the invaginated portion of intestine, seventeen inches in length, was discharged from the anus. A detailed account of the case appeared in the report of the proceedings of the Norfolk District Medical Society in the JOURNAL of December 28, 1876.

DR. JACKSON said that so far as he was aware this was the first case of the kind that had occurred in this vicinity, though many cases of discharge of a portion of the intestine had been collected. Dr. Thompson, of Glasgow, was authority for the statement that, however rare sloughing of the intestine might be, when it did occur recovery was the rule. In this case there was no question that it was part of the small intestine which had come away; valvulæ conniventes, which were observed, would indicate that it was probably the upper part of the ileum, or perhaps a portion of the jejunum. Dr. Jackson had always found that intussusception originated at the ileo-cæcal valve, with one exception, in which it occurred in the rectum.

Dr. Jackson mentioned a case of typhoid fever occurring in the practice of Dr. Jacob Bigelow which was marked by acute cerebral symptoms. At the autopsy nothing unusual was found in the brain, but there was intussusception through the ileo-cæcal valve. With regard to the suggestion that the intussusception might be upward instead of downward, Dr. Jackson had never seen such a case. He considered opening the abdominal cavity for intussusception, with a view to withdrawing the invaginated intestine, a foolhardy procedure, since it would usually tear before it could be withdrawn even in comparatively recent cases. In a case operated upon by Dr. John C. Warren it was found that nothing could be done except to sew up again. In internal strangulation, however, with no chance for sloughing, opening the abdomen might sometimes be entirely justifiable, as the band was often quite loose and might be easily severed. With regard to the diagnosis of intussusception in distinction from internal strangulation, the invaginated portion is generally within the large intestine, and is accompanied by tenesmus, with straining away of mucus and blood from the congestion of the outer coat of the invaginated portion. These symptoms were wanting in Dr. Gerry's case, as the trouble was in the small intestine.

DR. WEBBER said, with regard to the copious vomiting, that cutting off the nervous supply was found by Bernard's experiments to promote the exudation of fluid into the intestines. Sloughing or injury of the nerves which supplied the diseased part of the intestine might have the same effect.

DR. BOWDITCH thought that in cases of obstruction from any cause, heroic treatment by purgatives, enemata, etc., was unadvisable, and that palliative measures were more desirable. In this case purgative treatment might possibly have been of advantage, but in his opinion the patient did well in spite of the treatment, not owing to it.

DR. JACKSON said that the late Dr. James Jackson used to urge strongly in these cases an abstinence from the use of cathartics in any form. In typhlo-enteritis, also, in which there are so often the symptoms of obstruction, though none exists, Dr. Jackson thought the use of cathartics reprehensible.

DR. BOWDITCH mentioned a case of serious obstruction which occurred some time ago at the Boston City Hospital, the patient having had no operation for a week before entrance. Opium was administered; no food was given by the stomach and very little drink, but after the use of nutrient enemata for a fortnight the patient got well.

DR. WEEKS reported a case of obstruction occurring in a boy. There was a tumor in the neighborhood of the ileo-cæcal valve, with vomiting and pain. No cathartic was given. The treatment was palliative, by opiates, enemata, etc. Inflation was tried, but the patient died in five days. In another case, in which there was invagination in the lower part of the bowels, the patient with the use of opium recovered.

DR. ABBOT thought that cathartics could only do harm in intussusception, and that they must increase the trouble. He regarded their use as being usually due to obscurity of diagnosis.

With reference to the criticisms on the treatment, DR. GERRY said that in this case the early symptoms did not indicate intussusception, and cathartics were given for obstruction which was apparently removed, as discharges from the bowels occurred. He had mentioned the use of blue pill and black draught as measures adopted in the early days of the disease, when the diagnosis was not clear.

DR. BOWDITCH and DR. ABBOT agreed in thinking that the usual desire on the part of patients for purgative medicines in cases of colic and constipation, and the yielding of members of the profession in this matter, were to be condemned.

DR. JACKSON had been much struck by the absence of general peritonitis in cases of intussusception and internal strangulation, except in two or three cases in which there was perforation.

In answer to a question by Dr. Jackson, DR. GERRY said that his patient had been comfortable about two months, with occasional attacks of pain and vomiting.

Food per Anum. — **Dr. E. Chenery** read a paper on the administration of food per anum, and drew the following conclusions: (1.) Food administered per anum is absorbed by the rectum, not by the colon. (2.) Such amounts only as the rectum can retain, from four to eight ounces every few hours, are useful. (3.) We cannot look for any digestion in the rectum, therefore only such articles as can be easily absorbed are desirable, fresh milk, beef tea, eggs, and other albuminoid substances treated previously with pepsine. Oils pass readily into the lymphatics with the addition of a small amount of alkali.

Dr. Chenery mentioned the case of a patient who had been nourished several weeks by injections consisting of a teaspoonful of Liebig's extract and milk.

Uterine Polypus. — **Dr. J. Homans** showed a fibrous polypus of the uterus which he had removed by the écraseur. There had been considerable flowing for several months. The tumor was the size of a small pear and was attached to the inner os. There was no hæmorrhage at the time of the operation or since.

Stone in the Bladder of an Infant; Lithotomy; Recovery. — **Dr. E. H. Bradford** showed a calculus which he had removed by lithotomy from the bladder of a child one year and ten months old. The patient was brought to the Carney Hospital, suffering from frequent and painful micturition. There was no blood and but little pus in the urine. He had had these symptoms for at least a year, according to the statement of the mother. The operation was the ordinary one of lateral lithotomy. The patient made a perfect recovery. The stone measured two by two and three fourths inches, and weighed 61.5 grains. The age of the child was the only thing unusual in the case. Mr. Teevan reported in 1875 (*Medical Times and Gazette*) a successful case of lithotomy in a child one year and eight months old, and it is said to have been performed on still younger patients.

Tuberculosis of the Genito-Urinary Organs and Caries of the Vertebræ. — **Dr. Fitz** showed the specimens, which came from a patient of Dr. A. H. Johnson, of Salem, who had been kind enough to forward his notes of the case. The patient, thirty years of age, had had two children, the youngest born eight years ago, and two miscarriages since that time, at three and six months respectively. She had never felt well since the last one, and formerly suffered from painful menstruation. About five years ago she complained of severe pain in the back between the shoulders, which abated after some weeks and did not annoy her much till about two years ago, when she was suddenly seized with severe pain in the same region while running a sewing-machine. The pain was so bad that she was obliged to give up work, and could eat no supper. From this time on till her death her back gave rise to more or less trouble, at times aching severely. For the past twenty-one months she had not menstruated, and had been troubled with incontinence of urine during nearly the whole of this period. She had a cough during the past winter, from which she apparently recovered after some three months.

She kept about her household duties till five months ago, but was easily fatigued. Last July she was treated by a physician for "dysentery," from which she was not relieved till a month later.

Dr. Johnson first saw her about six weeks previous to her death, when there was a marked cachectic appearance. An outward spinal curvature in the dorsal region was very prominent, though there was but little pain in the back. Incontinence of urine was the most marked symptom, though diarrhœa was also annoying. Examination of the urine showed the presence of a small amount of pus and albumen; during the first week of attendance the pulse was 100 and weak; the bowels were loose and the appetite capricious. A gradual improvement then took place. During the early part of the last three weeks of her life the temperature became elevated and chills occurred. There was then a temporary change for the better followed by loss of appetite and increasing prostration.

Autopsy. — The autopsy showed that the spinal curvature was due to almost complete caries of the tenth dorsal vertebra, with cheesy degeneration of the inflammatory products and sclerosis of the adjoining parts of the bodies of the vertebræ immediately above and below. Tubercles were not found in the vicinity, nor was there any change in the membranes of the cord nor evidence of its compression. There were numerous fibrous tubercles of the lungs, and tubercular ulcers of the intestine. The mucous membrane of the bladder was ulcerated and studded with tubercles. The kidneys were sacculated, the walls of the pelvis and calices showing extensive cheesy tubercles. The mucous membrane of the uterine cavity was replaced by a coherent cheesy layer towards the muscular coat, containing numerous tubercles, and the uterine cavity was filled with dry cheesy masses, but was not dilated. These alterations ceased with considerable abruptness at the internal os. The os externum was eroded, the ulcerated surface showing an occasional gray tubercle. Both Fallopian tubes were also tuberculous, and the canals contained considerable cheesy material.

Pigmented Choroidal Sarcoma. — DR. B. JOY JEFFRIES showed a specimen of intra and extra ocular pigmented sarcoma from a patient of Dr. F. P. Sprague. A man aged fifty-four, American, presented himself at the Eye Infirmary with the right eye enlarged, protruding, and much congested. The movements were impeded, and the patient complained of attacks of acute pain. Below and outside were bluish spots resembling choroidal staphylomata. Tension of globe not much increased. Cornea clear and anterior chamber normal. Iris discolored, lens opaque, white, and shrunken. Six years ago first noticed his vision failing and bright spots before the eye. In two years vision had gone, then pain for the first time. The pain would come and go, attacking him suddenly, and was so severe twice as to produce vomiting, and confine the patient to the house for several days. The eyeball was red and inflamed at each attack and protruded more afterwards. Enucleation showed a large tumor attached to the middle and posterior part of the globe surrounding the optic nerve. The hæmorrhage was considerable. The orbit seemed quite cleared of the growth after operation. On hardening the tumor in Müller's fluid Dr. Jeffries found a pigmented choroidal sarcoma filling half of the vitreous space. It had passed through the sclerotic in the middle of the globe and grown backwards, around the optic nerve sheath, to the size of a small English walnut. On section through the tumor and nerve, it was found not to have invaded the latter through the sheath, but the intra-ocular portion which extended over the nerve had followed up into it. The microscopical character of the tumor was that of sarcoma, the pigment varying in amount in different portions, very similar to the cases given in Knapp's book on intra-ocular growths. As to the prognosis, Dr. Jeffries said he should have regarded it as most grave, were it not that in a nearly similar case of his own the patient had reported himself some three years after with no sign of return of the disease, and was well enough to think of removing to California to labor.

Enucleation of the Eyeball after Injury. — Dr. Jeffries also exhibited an eyeball he had removed, of which the anterior half of the vitreous was filled with pus, and in this a piece of metal was found, a line and a half in length. The patient, a robust groom twenty years of age, was standing by a forge and felt his eye struck by a piece from the hammer. This was at four P. M. The next morning, at ten A. M., Dr. Jeffries found a wound of the cornea of the right eye a line and a half long, up and out; cornea hazy, iris muddy, pupil fixed, and pus to the height of two lines in the bottom of the anterior chamber. Globe inflamed and eye painful. Just under the corneal wound was either the foreign body or a hole in the iris. The cornea and aqueous humor were too dull to test this by the ophthalmoscope; therefore to relieve pain, at least by reducing tension, and to attempt to remove the foreign body should there prove to be one, a lance knife was passed into the anterior chamber just outside of the wound, and an effort was made with forceps to grasp any foreign body in the iris. None was removed, and an iridectomy was made. The pus flowed off freely. The patient had not agreed to enucleation or it would have been done then. He was comfortable the next day, but there was pus all around the other edge of the anterior chamber and very threatening signs of panophthalmitis. He then consented to have the globe removed, and on section the piece of iron was found as above-mentioned. Dr. Jeffries had never seen such rapid pus-formation from so slight an injury, and thought the case interesting from a medico-legal point of view.

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TRACHEOTOMY.[1]

THE compact little work which deals with this operation contains an amount of interesting and valuable information which one would hardly expect to find in so short a treatise. The book is evidently intended by the author as a guide to practitioners. It opens with a brief description of the anatomy of the trachea; then follows a description of the instruments and apparatus connected with the operation given in minute detail. The various forms of tubes are illustrated freely. Among these we notice a right-angled tube which may be lengthened or shortened at pleasure by means of a screw, according to the depth at which the trachea lies. This was invented, the author tells us, by Mr. Durham, of Guy's Hospital, and has his highest approval. It is evidently used quite extensively by our English colleagues. Dr. Fuller's bivalve speculum, although extremely convenient for introduction into the trachea, is considered dangerous, the sharp edges of the outer canula having caused several cases of fatal hæmorrhage after the operation. Trendelenburgh's canula, which is used when tracheotomy is performed preparatory to operations about the mouth and jaws, to prevent the flow of blood into the trachea, is approved. We fail to see the advantage of a complicated apparatus like this over the simple canula combined with plugging of the pharynx by a sponge. We may mention here a description of Dr. B. Richardson's bellows for artificial respiration, consisting of two rubber tubes and bulbs so arranged as to inject and suck out air from the lungs through the canula by a simple movement of the hands.

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[1] *On Tracheotomy, especially in Relation to Diseases of the Larynx and Trachea.* By W. PUGIN THORNTON, London. Philadelphia: Lindsay and Blakiston. 1876.

The description of the operation is exceedingly clear, and the advice given here and throughout the book is sensible and to the point.

The book is adorned with three photographs of specimens which illustrate fairly the points intended to be shown.

The various diseases for which tracheotomy is required receive their proper share of space. We would call the attention of our younger readers to the following statement under the heading, Croup and Diphtheria. "There are no cases which more fully reward the practitioner than those belonging to this class, when tracheotomy seems inevitable, and yet when, by unremitting attention and watching, the operation may be avoided. In these diseases tracheotomy is far less satisfactory than in any other morbid condition in which this operation is admissible, except perhaps when it is performed for scalds of the larynx, and therefore if there should be any chance of recovery without resorting to this measure, the chance should be given." Dr. Thornton mentions four cases in which the operation has been performed successfully for these diseases, under one year of age. Three are reported by English surgeons.

We notice that the author, in speaking of cystic goitre, remarks that the plan introduced by Mackenzie of converting the tumor into a chronic abscess by one or two injections of a solution of iron (ʒij ad ʒi) is so infallibly successful that it ought invariably to prevent the necessity of performing tracheotomy. We are not inclined to think that surgeons generally would indorse this opinion.

We think this a useful book, and one which will repay careful reading.

SANSOM'S PHYSICAL DIAGNOSIS OF DISEASES OF THE HEART.[1]

The author has given us in this little book an excellent compend of the results of physical exploration of the heart, excepting those derived from the sphygmograph, which, he says in the preface, it seems better in the present state of our knowledge to study apart from the ordinary means of physical diagnosis. Although intended as a *résumé* of well-established facts, it is not wanting in evidence of independent observation and thought. Dr. Sansom

[1] *Lectures on the Physical Diagnosis of Diseases of the Heart.* By Arthur Ernest Sansom, M. D. London: J. & A. Churchill. 1876. 12mo, pp. 115.

recognizes the value of the binaural stethoscope for examination of the heart, but thinks that sound heard through it may be rendered too intense, so that if two sounds occur near together, one may be drowned. Therefore he uses both forms of stethoscope, that is, the single and double, successively.

Sansom considers pulsation of the retinal vessels to be an objective sign of great value in case of aortic regurgitation. He says that he has examined a large number of cases in which an aortic diastolic murmur existed, and has very rarely failed to find such visible pulsation, which is more common in the veins, but exists in both arteries and veins in many cases.

In regard to the much discussed transitory systolic murmurs over the body of the heart, or at the apex, the author says (1) that one may have a systolic murmur over the right ventricle from a weakness in the walls; (2) in case of chorea there is always organic lesion of a valve which may be temporary; (3) the systolic murmur in certain acute febrile affections is of musculo-hæmic pathogeny, that is, due to tremulous contraction of the enfeebled heart-muscle or impoverished blood. He accepts M. Hayem's proof of myocarditis in such cases, but does not agree with Hayem that regurgitation is produced thereby. The use of the word intermediate for mediate (auscultation) is novel, but reasonable. The embossed outline figure of the chest on the cover may be useful to those who have no better way of obtaining a "chest-chart."

The only criticism which we feel ourselves called upon to make is upon the print of the book, which is altogether too fine for a text-book.

SCARLET FEVER.

The order of the Boston Board of Health, which appears in the present number of the Journal, is a step in the right direction. Every physician must hereafter report to the Board of Health cases of scarlet fever which he may be called upon to attend, and every householder must also give a similar notice of the appearance of scarlet fever within his family. An additional order of the board prohibits any child from any family in which scarlet fever may appear from attending school until four weeks have elapsed since the beginning of the last case of such sickness.

This action of the board is merely applying to scarlet fever the same requirements which heretofore have been held to apply only to small-pox. We cannot doubt but that the medical profession will do all that may lie in its power to aid the health authorities in reducing, if possible, the annual death-rate of this disease. The wisdom of enforcing the law in cases of small-pox is universally admitted, and we can but think that most happy results would follow the adoption of a similar method of treating a disease which annually carries off in this city a far greater number of victims than small-pox. During the years 1874, 1875, and 1876 there were 1282 deaths from scarlet fever, while only six deaths were reported from small-pox. During the years between 1867 and 1876 there were 3232 deaths from scarlet fever, and 1264 deaths from small-pox. Of this latter number, 1026 occurred during the so-called epidemic of 1872–73. Leaving, therefore, that number out of the question, we have 238 deaths from small-pox to offset 3232 deaths from scarlet fever. When it is remembered that out of 148,829 deaths collected by Murchison, 142,337 were of children under fifteen years of age, it will be readily seen that the predisposition to scarlet fever rapidly lessens with the increasing years of childhood, and that, therefore, if childhood can be protected from the attacks of this disease, adult life is comparatively secure, a fact which does not hold good with small-pox. Any precautions, therefore, which shall lessen the danger of an individual falling a victim to scarlet fever in his youth is of far greater value than similar precautions taken as regards small-pox.

It is well known that scarlet fever is, like small-pox, a contagious disease, and that it has never occurred spontaneously in isolated islands, except where it has been introduced from without. A careful examination of the history of the disease, recently written by Professor Thomas, of Leipsic, shows that its spread from Europe to other countries has been due to commerce. It was unknown in Iceland until 1827, in Australia until 1849. It first appeared in North America in 1735, and no case is reported in South America until as late as 1829. If, as seems probable, its spread is due solely to contagion, direct or indirect, it is conceivable that the adoption of measures similar to those resorted to during epidemics of small-pox would result in putting an end to a disease so fatal in its character. At present, however, it would be impracticable to attempt to isolate in hospitals patients suffering from scarlet fever as is done with cases of small-pox. It is possible, however, to prevent the disease from being spread wider and wider in the community through the agency of schools.

In this connection we may allude to the fact that the Board of Health of Brookline voted, January 3d, to advise the school committee that no child resident in any house in which there has recently been a case of diphtheria, scarlet fever, or small-pox should be allowed to attend school without first bringing a certificate from the attending physician that all danger of communicating the disease had passed, such certificate to be indorsed by the physician of the Board of Health. The school board at once (January 7th) adopted the suggestion.

The temporary inconvenience which such enforced absences from schools will occasion should have but little weight when compared with the results to other children, who may thus be protected from a disease oftentimes so fatal or so productive of a serious and lasting impairment of the general health.

The Boston Board of Health have been for some time considering the advisability of issuing the orders which they last week adopted, and the wisdom of their action will beyond question meet the approval of the community as well as of the members of the medical profession.

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ASYLUM REPORTS.

The report of the Northampton Lunatic Hospital discusses at much length several topics of interest to physicians and the public generally. It is impossible to condense it to advantage, and to miss Dr. Earle's peculiar style of putting things would be a loss to the reader. Any one, therefore, interested in the fallacies of hospital statistics, especially in reference to the percentage of recoveries, should obtain this report. The great comparative cost of the Danvers hospital is also severely criticised.

The biennial report of the Vermont Asylum at Brattleboro' contains many suggestions by Dr. Draper, concerning the nature of insanity, which do not call for comment. We may, perhaps, except his opinion that the families of the insane have a right to be protected from their depressing and contagious influence. The morbid mental atmosphere which surrounds many insane persons is not a favorable one in which to bring up children already predisposed to mental disorder. The member of such a family on whom the care of the patient devolves is in especial danger, and should not be subjected to such risk simply because the patient is harmless in the physical sense. Such a law as has recently been proposed in Vermont, that none but dangerous lunatics be sent to a hospital, would not only cut off a large part of the insane from all efficient curative measures, but would tend directly to produce insanity in the families of those already insane.

The Vermont Asylum has recently been subjected to the inspection and criticisms of a commissioner. This asylum is an incorporated institution, which boards the insane poor of the State, cities, and towns at a fixed rate. The commissioner condemned this system, and advised the building of a hospital by the State. We have on hand a review of the report of the commissioner by the officers of the asylum, and also a joint report of the committee of the general assembly of Vermont appointed to examine the matter. The committee indorse the management of the asylum and report adversely to the proposed state hospital.

MEDICAL NOTES.

— Dr. Meynert, the well-known professor of mental diseases in Vienna, had the misfortune to make a misstep on the stairs of his house a short time since and receive a fall by which he suffered a fracture of both bones of the leg near the ankle.

— For palpitation of the heart which does not depend on an organic disease of the organ or of the central nervous system, Mardier recommends a novel treatment, which consists in causing the patient to bend forwards with his arms hanging down so as to make the blood flow into the upper part of the body. If in addition the patient be advised to hold his breath for a few seconds, while in this position, the effect is said to be produced even quicker.

— In pernicious anæmia, when iron given internally can no longer be absorbed, Huguenin (*Gazette des Hôpitaux*, August 26, 1876) makes use of the subcutaneous method of its administration. The formula for the injection of iron is as follows: —

℞ Ferri pyrophosph.,
Ammon. sulph. . . . . āā 5.00 = ʒ i¼.
Aquæ destillat. . . . . 50.00= ʒ i⅔. M.

So that a subcutaneous syringe holds three centigrammes of iron, or half a grain. Soon after the injection, redness of the skin, œdema, and often even heart symptoms are seen, but all these phenomena soon pass away, and the general condition is improved.

— We take the following changes of university professorships from the *Wiener medizinische Presse* of November 12, 1876. Dr. Ponfick, former assistant of Virchow and recently professor of pathological anatomy in the University of Rostock, has accepted a call to the University of Göttingen. The extraordinary professor, Dr. Albert Thierfelder, in Leipsic, will fill Ponfick's place at Rostock. On the 1st of November Dr. Schiefferdecker, former assistant in the University of Strassburg, formally entered on his duties as *privat docent* for anatomy in the University of Rostock. From an earlier number of the same journal we learn that Dr. Karl Senhofer, extraordinary professor of medical chemistry in the University of Innsbruck, has been chosen regular professor of general and pharmaceutical chemistry in the University of Vienna. At Heidelberg, extraordinary professor Dr. Hermann Lossen is intrusted with the direction of the clinic of the recently deceased surgeon, Simon.

— We make the following quotation from the New York *Medical Record*, adding that the subject is one to which we made some allusion in an editorial article in the number for January 4th. We fear the reform needed will hardly be accomplished by so mild a method as is hinted at by our Kentucky contemporary. "The Louisville *Medical News* says: 'Evidences of new medical journals for 1877 are rife. It will soon be in order for the *Boston Medical Journal* and the New York *Medical Record* to read the riot act.'

"As far as we are concerned, we give the editor of the *News* due credit for his foresight, for the following was in type when we read the above: —

"'Several new medical journals are announced for the coming year. The reasons given are, "in consequence of a want long felt by the profession," etc. The shoe is so apt to be on the other foot, that at the end of a year or two the wants of the journal are much in excess of those of the profession. The latter may be considered, for the sake of the argument, an unappreciative set in any event, but that is no reason why we should not hope for the best.'"

— In the Section für Anatomie und Physiologie of the Versammlung deutscher Naturforscher und Aerzte in Hamburg, 1876, Professor Quincke spoke of the diuretic action of waters containing carbonic acid. Experiments with water containing carbonic acid and that free from it, carried on in healthy or nearly healthy individuals, showed that the secretion of urine in the next three hours after drinking the carbonated water was richer (seven to twenty-one per cent. of the entire amount). The probable cause of the great diuresis was an accelerated resorption brought about by the carbonic acid. Other series of experiments in which the individuals took no drink on waking up in the morning showed that the urine secreted in the morning hours was clearer and of lighter specific gravity than the night-urine which was passed on getting up. Also the average amount secreted in an hour was usually greater in the morning hours than in the night. These facts show that during sleep the secretion of urine is relatively small, and that after waking it is increased.

In the Section für innere Medicin, Professor Quincke reported two cases of pernicious anæmia which he cured by transfusion. Human blood was used, and a partial destruction of red blood corpuscles followed, which showed itself in transient hæmoglobulinuria.

— Meding, in the *Archiv der Heilkunde*, speaks of a case of parametritis puerperalis which ran a rapid and favorable course under the use of salicylic acid internally. He tested the milk of the patient and the urine and fæces of the child who nursed, but could find no traces of the drug in either.

— Professor Leyden commenced his new labors as clinical teacher in the Charité at Berlin, in place of Traube, on the 30th of October last. In his opening address he eulogized his teacher, Traube, and thoroughly explained the method he intended to pursue in his clinical instruction.

— At a meeting held October 11, 1876, of the Berliner medicinische Gesellschaft, Dr. E. Wiss spoke in almost unbounded praise of balsam of tolu as an application to wounds of all kinds. When the balsam was put upon wounds it produced an immediate sensation of burning, which, however, very soon ceased, as did all pain, even in most severe wounds. Fresh wounds under this treatment showed no inflammation, and in those already inflamed it soon ceased. No suppuration took place, and where it was already present it soon disappeared. No wound treated by him by this method took on a septic character, even under the most unfavorable local and climacteric surroundings. In all cases, even in lacerated wounds, there was union by first intention, a thing which had not been his experience in any other method of treatment. Two cases were detailed. He considers that the balsam hinders suppuration, and after his surgical experience he made use of it in two cases of old women with profuse catarrh of the lungs. The drug was given in an emulsion with yolk of egg (4.0 : 120.0 = 64.8♏ to 4℥; one teaspoonful every two hours), and one case was well in eleven days, while the other recovered in three weeks. In these cases "all other medicines had failed."

— We have lately received Dr. Billings's second report on the construction and organization of the Johns Hopkins Hospital, with fourteen plates showing the plans of the architect, Mr. Niernsee, and embodying the merits of the various plans which had already been suggested. The original volume published by the trustees, which has received such general commendation, is a sufficient guaranty that any combination of the best ideas in it must contain nearly all that is known at the present time to make a hospital all that it should be. The system of ventilation by flues leading from the different wards to one vast chimney appears to be most in favor, but not decided upon; and it has apparently been selected without consideration of the fact that the efficiency of these flues diminishes very rapidly in proportion as they extend to a distance from the central ventilating-shaft. The house of Mr. Winans, which is taken as a model, or a school-room, may be easily and thoroughly ventilated in this way; but it is a very different matter when one deals with a dozen wards full of sick people. One of the greatest advantages of the block plan is the facility offered for *simplicity* in all matters pertaining to hospital hygiene.

— The University of Griefswald, Prussia, has in this winter semester two hundred and twenty-two matriculated medical students. The University of Erlangen, Bavaria, has one hundred and ten matriculated medical stuents, of whom forty-four are from other states than Bavaria.

In the University of Zürich, Switzerland, are twenty-six female students, twenty-three of whom are registered in the medical, and three in the philosophical faculty. Of these twenty-six, Russia sends nine, America six, Germany, Bohemia, Servia, and Switzerland two each, Hungary, England, and Holland one each. It is a well-known fact that Russian ladies in large numbers were refused admission to their own universities, and petitioned the senate of the Zürich University for admittance. The pressure was so strong that their petition was complied with, though at the cost of strong opposition on the part of the senate of the university. A few years ago, when over one hundred Russian ladies were at Zürich, of whom the majority were medical students, the czar issued an ukase, forbidding them this privilege, and ostracizing those who did not return to Russia within a limited time. This is the sole cause of the decadence in the number of female students in Zürich.

— Professor Valentin, of Bonn, celebrated his fortieth anniversary as professor of physiology in that university early in November. His medical colleagues presented him with a bronze statue of himself, and he was made doctor of philosophy *honoris causâ* by that faculty. Valentin was formerly a student of Purkinje, of Breslau, and is perhaps best known to the medical reading public as the one who first described ganglion cells and flimmer cells (*flimmerzellen.*)

— A case of intussusception with sphacelation and subsequent recovery is reported in the *British Medical Journal*, by E. A. Fox, F. R. C. P. The patient, a boy aged four and one half years, on the 18th of July complained of pain in the bowels and had persistent vomiting. He continued to suffer till July 23d, when the vomiting began to diminish, the tympanites lessened, and flatus passed per anum. The next day there was a small, loose evacuation without blood, and on the 25th he had four copious pale evacuations; with the last there was a lump of fleshy-looking substance, which upon examination proved to be a foot of the large bowel turned inside out, with the vermiform appendix, which also was turned inside out, attached. On slitting open the ascending colon it was found to contain nine inches of small intestine, showing that the intussusception began at the ileo-cæcal valve. The whole of the separated bowel was quite black and gangrenous. The patient gradually improved, and on September 30th he was quite recovered and strong. During the course of the disease there was absence of inflammatory symptoms except pain. The separation did not take place until the tenth day, and the expulsion not until the twelfth. The sphacelated bowel measured twenty-one inches in length.

— Intussusception of the rectum in pregnancy is a malady to which Dr. B. E. Hadra calls attention in *The Richmond and Louisville Medical Journal* of December, 1876. He thinks it merits a greater share of attention than most of our text-books give to it. The long-standing obstipations so common in pregnancy, as well as the direct pressure exerted by the gravid womb upon the rectum in the direction of the sacrum, tend to produce the trouble. Two illustrative cases are given. Their symptoms were, stools very frequent, small, slimy and more or less mixed with blood, and uncontrolled by internal medication, tenesmus, absence of fever, etc. Examination by the rectum easily revealed the intussuscepted fold. The treatment consists in copious injections of cold water made with considerable force. These unfold the invagination, and produce natural dejections.

MASSACHUSETTS GENERAL HOSPITAL.

SURGICAL CASES OF DR. WARREN.

[REPORTED BY C. W. COOPER.]

Irreducible Hernia. — One year ago the patient, a fireman, noticed a small, hard swelling in the right inguinal region. He could assign no reason for its appearance. For eight months there was little or no change, and the tumor caused no inconvenience. Then the mass began to descend, and after a hard day's work would pass quite down into the scrotum, returning to its former position during the night. At the time of his admission there was a swelling in the right inguinal region, extending as far as the upper part of the scrotum, and feeling like a large finger under the skin. Taxis was employed without success; the patient was then ordered to bed, and absolute rest in the horizontal position enjoined. After eight days of rest the hernia was found to have entirely disappeared, spontaneous reduction having taken place. The patient, provided with a truss, was allowed to walk about, and after being kept under observation for a few days was discharged, well. The rapid and favorable effect of the horizontal posture upon an otherwise irreducible hernia was noticeable in this case.

Stricture of the Urethra. — CASE I. S. W. entered the hospital July 28th with a gonorrhœal stricture of twenty years' standing. After many trials on different days, a capillary bougie was introduced into the bladder. Two days after his admission, the patient being etherized, a guide was passed with some difficulty into the bladder, and the stricture divulsed, Voillemier's divulsor being used for the operation, after which an English No. 12 catheter was fastened in. There was some pain that night, relieved by a suppository of one quarter of a grain of morphia. The patient was quite comfortable, making no complaint of pain during the remainder of the treatment, which was as follows: the catheter was removed on the fifth day, and a metallic sound, English No. 12, was passed daily for a week; the sound was passed every other day for the succeeding week. The patient was then taught to pass the instrument himself, and instructed to perform the operation once a week for a time, and to gradually lengthen the intervals. This case was complicated by an attack of gonorrhœal rheumatism, through which complication he has been kept under observation for several months, and as far as the stricture is concerned he has no trouble whatever, and experiences no difficulty in keeping up the after-treatment.

CASE II. G. G., an alcoholic subject, entered the hospital September 12th. The patient contracted gonorrhœa several months ago, and never submitted to treatment for that disease. Has had some difficulty of late in passing water, the stream being small and forked in character. Twenty-four hours before entrance complete retention came on. He was at once etherized, and a stricture was found to exist in the membranous portion of the urethra, which scarcely admitted the passage of the smallest bougie. The stricture was divulsed by the same operation as above, and a catheter was fastened in.

During the afternoon and evening severe pain in the penis was complained of, and the patient twice unfastened and removed the catheter, but was prevailed upon to have it replaced. After a good night's rest, superinduced by morphia, he felt quite comfortable, and made no farther complaint or objection to treatment. The catheter was removed on the fourth day, and the sound put in requisition as above. In eleven days he was discharged, with instructions to pass a No. 12 sound at intervals.

CASE III. J. R. entered the hospital September 28th. Has had trouble in passing water for two years; the stream has been small and forked in character. For the last two weeks he has suffered from incontinence. On examination a stricture was discovered, through which a No. 6 French bougie passed without much difficulty.

In this case a trial was made of the treatment by gradual dilatation as follows: the largest bougie that the stricture would receive easily was left in for an hour. During the afternoon there was marked constitutional disturbance, a chill followed by febrile symptoms of some severity. On the next day the same instrument was left in for the same length of time. This was followed in a few hours by more severe symptoms than those of the day before, well-marked urethral fever being the result. Four days were allowed him to recover from the effects of this treatment. At the end of that time the operation of divulsing was performed, and was followed by no bad symptoms. The catheter was removed on the third day, and in twelve days he was discharged, being able to pass an English No. 12 sound himself.

CASE IV. J. A. entered October 5th. Has had difficulty in micturition for four or five years. attacks of retention occurring every six months. In relieving retention it has been necessary to use a small instrument. On examination a No. 4 French bougie passed through the stricture. On the second day the operation of divulsion was performed. No trouble followed; the patient bore the catheter easily for three days, and in twelve days was discharged, well. Two weeks later he reported in good condition, having had no trouble in passing an English No. 12 steel sound, as instructed.

CASE V. J. E. entered October 20th. Has been troubled with stricture, following gonorrhœa, for two years, with the usual symptoms of occasional retention and a small stream of urine. As a No. 8 French bougie could be passed without difficulty, the method of gradual dilatation was tried. A bougie was left in the stricture for half an hour. The patient soon after had a chill, followed by febrile symptoms. On the next day the bougie was again passed and allowed to remain for a time. For the next twenty-four hours he suffered severely from urethral fever. Three days of rest were allowed, and the stricture was then divulsed as in the former cases. There was no chill that evening, and no trouble while the catheter was left in the bladder or during the after-treatment. In thirteen days he was discharged, with instructions to use a sound, English No. 12.

CASE VI. W. H. entered the hospital last January with a urinary fistula opening near the middle of the perinæum. After six weeks of treatment he was discharged, the fistula having healed. He reëntered June 20th because it had again opened, and urine passed almost entirely through the perinæum. A stricture, admitting the passage of a capillary bougie, was found at the seat of the urethral opening of the fistula. By Voillemier's divulsor the stricture was ruptured, under ether, as in the above cases, and a No. 12 English catheter tied in. Ten days after, the fistula was laid open by an incision and the wound packed with lint. In this case a catheter was kept in the bladder for six weeks, the instrument being removed and a fresh one inserted every five days.

At the end of that time, as no urine had come from the perinæal opening for a week, the catheter was withdrawn, and an English No. 12 steel sound passed daily. In a short time the wound had entirely healed, and the patient had learned to pass the sound himself. He was discharged, with instructions to pass a steel sound occasionally.

The slight constitutional disturbance caused by the operation of divulsion, together with the general absence of pain and discomfort following it, was a marked feature of this collection of cases. The case of rheumatism occurred in a patient with broken-down health and a stricture which had been impassable for an instrument for some time before entrance. In many of the cases the condition of the patients at the time of entrance was far from what would be considered favorable for this operation. Slight febrile disturbance was usually noticed the day following the operation; from that time a rapid convalescence took place unmarked by unfavorable symptoms or discomfort.

Fracture of the Femur; Delayed Union. — The fracture was caused by a fall upon the pavement; its situation at about the middle of the bone. The case had been treated for nineteen weeks outside the hospital, the man being kept in bed, with apparatus applied to keep the fragments in position. An examination at the time of his entrance showed that ossific union had not taken place, there being free mobility at the point of fracture. He was etherized the next day, and the ends of the bone well rubbed together by Dr. Gay. The limb was then fixed in an immovable position by the application of a long Desault's splint. The leg was left undisturbed in this apparatus for two months, and blisters were applied at intervals over the seat of fracture. At the end of that time, though a considerable amount of callus had been thrown out, union was by no means firm. Three weeks later the fragments were quite firmly united, though there was still some mobility of the parts.

The patient had now become somewhat reduced by his long confinement to bed, and as the limb seemed strong enough the apparatus was removed, and a dextrine bandage applied, extending from the umbilicus to a point a few inches below the knee, with a light splint on the outside of the thigh to give additional support. He was allowed to walk about the ward with crutches, and after being kept under observation for ten days was sent home.

Seven weeks after his discharge he reported with the bandage in good condition, his general appearance much improved. The bandage was removed entire by sawing through longitudinally in the median line, and pulling it off like an unlaced boot.

Ossific union was found to be nearly perfect, but as there might still be some danger in abandoning all support, the bandage was sprung again into place and secured with straps, instructions being given that it should be worn two or three weeks longer.

CORONERS IN PHILADELPHIA.

Messrs. Editors, — The accompanying account of my experience in Philadelphia with one of its coroners and his satellites was published in the *Boston Herald* of December 28th; but by abridgment of my paper some important facts were omitted, which perhaps can be made to contribute towards the overthrow of a system which gives such authoritative power to unprincipled men.

The first act of the coroner's representative when he reached the hotel was to invite all present to take a drink with him; and the first place I visited by the undertaker's direction in search of the coroner was a bar-room, where the proprietor informed me that the coroner "had just left," but was soon expected back.

Not a witness, so far as I could learn, was summoned from the hotel; certainly none was present at the inquest but Dr. Munn, who went in accordance with my request, and was asked no question about the case.

Respectfully, Henry J. Barnes, M. D.

21 Beacon Street.

"A gentleman in this city, a relative of Dr. Abel Ball, whose sudden death in Philadelphia last November will be remembered, is the authority for the statements given below, showing how the business pertaining to the coroner's office was performed.

"On his arrival in Philadelphia in response to a summons, the gentleman found that an intoxicated man claiming to represent the city coroner had demanded the body, to which the hotel proprietor and a physician objected. The former said that Dr. Ball was his friend, and had died in his house, without a suspicion of other than a natural cause, to which a respectable physician who was in attendance would certify, and that an inquest was unnecessary; furthermore, he expected a relative that day to take charge of the body. It was finally given up to the undertaker, who accompanied this man, with the understanding that he was to keep it until some one arrived authorized to take charge of it, and the promise of the "coroner" that no autopsy or inquest should be made. Contrary to this promise, the body had been removed to the Morgue, an autopsy made, an inquest begun; and the coroner's undertaker, on being visited by the relative with a request to be given the body, at once replied that it could not be done that day. He gave as a reason that they (the coroner and himself) were democrats and the Board of Health republicans, who were not in pleasant relations with them. Finally, the undertaker agreed to do what he could, and representing that a box would be needed in which to put the body he offered to sell one to the gentleman, and taking him to his warerooms did sell him a pine box.

"Afterwards they sought and found the coroner, who said, 'Nothing can be done to-day, as the doctor who made the autopsy has not rendered his report, and an inquest, begun Saturday, has adjourned until Monday.' The gentleman then asked him why these proceedings had been instituted; and he replied that 'in case the deceased had a life insurance, friends could obtain the policy.' Members of the family of the deceased were shocked, on seeing the body, at the deformity about the head, due to a heedless adjustment of the calvaria, the part removed to make an examination of the brain, which was entirely uncalled for, in view of the "heart disease" being known, and except for the additional fee which is allowed for head examinations would never have been made."

The following is an extract from a statement of Dr. John Munn of New York: "Then the case of Dr. Abel Ball was called, and up rose the august doctor, book and post-mortem case in hand, who declared that no signs of violence were discovered. He 'found the heart fatty and softened and a certain amount of fluid on the brain,' and that 'the man undoubtedly died of heart disease.' Whereupon the coroner cried out, 'What is your verdict, gentlemen?' Immediately from the two jurors who had been paying attention came the response, 'heart disease.' Nearly two minutes were consumed in this case."

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COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING JANUARY 6, 1877.

	Estimated Population, July 1, 1876.	Total Mortality for the Week.	Annual Death-Rate per 1000 for the Week.	Death-Rate for the Year 1876.
New York	1,061,244	500	24.49	27.46
Philadelphia	825,594	267	16.82	22.24
Brooklyn .	506,233	218	22.39	24.92
Chicago . .	420,000	156	19.31	20.41
Boston . .	352,758	120	17.69	23.39
Providence	101,500	36	18.44	18.34
Worcester .	51,087	25	25.45	22.00
Lowell . .	51,639	20	20.14	22.21
Cambridge	49,670	13	13.61	20.54
Fall River	50,372	9	9.29	22.04
Lawrence .	36,240	19	27.26	23.32
Lynn .	33,548	16	24.80	21.37
Springfield	32,000	1	1.62	19.69
Salem . .	26,344	14	27.41	23.57

Normal Death-Rate, 17 per 1000.

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THE METRIC SYSTEM.

Messrs. Editors, — The very practical suggestion of Mr. Doliber in the last Journal, and conversations with physicians relative to the article on the Metrical System, etc., in the Journal of December 21st, lead me to think it may be wiser to retain the abbreviations *gmm.* and *c. c.* in prescribing, thus avoiding any possible misunderstanding in dispensing the medicines; and were the article not yet published I would expunge the third formula and the sentence below it commencing "The druggist is expected," etc.

Very respectfully, Albert N. Blodgett.

Boston, *January* 11, 1877.

Books and Pamphlets Received. — A Practical Treatise on Diseases of the Skin By Louis A. Duhring, M. D., Professor of Diseases of the Skin in the Hospital of the University of Pennsylvania. Philadelphia: J. B. Lippincott & Co. 1877. (For sale by A. Williams & Co.)

The Popular Health Almanac for 1877. New York: E. Steiger.